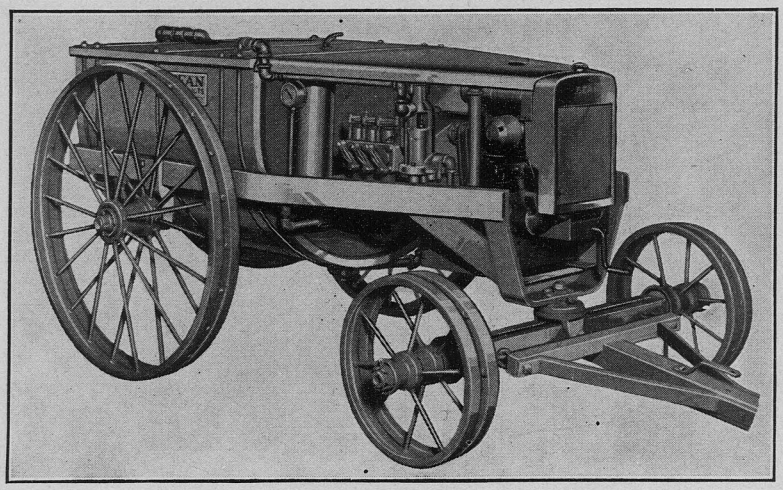
The Maryland Fruit Grower

July, 1933

Maryland State
Horticultural Society

A New Line of "ROYAL" SPRAYERS



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Maryland ◆ Fruit ◆ Grower

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The Maryland State Horticultural Society

A. F. VIERHELLER, Editor

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SIZE AND COLOR

We used to sell the little red apple without much trouble. Usually, it came from a tree that was growing rather slowly, on a soil not rich in nitrogen and not very well supplied with moisture. The trees were piling up an accumulation of carbohydrates in the leaves and twigs. These carbohydrates, —starch and sugar were made in the leaves, of course, and with a low amount of nitrogen were causing only a few small, but red apples to be produced on each tree, for it is from carbohydrates that chromogen is formed and from which colors are derived. Accumulation of carbohydrates, early in the season, give better chance for color.

Then the market called for BIG apples. We met the demand by using nitrogen fertilizers. But our trees were not accustomed to handling such large amounts of nitrogen. We "upset their digestion". They grew large green leaves, more fruits, and the fruit got large, but color was not so good. After a few years our trees began to adjust themselves to the change. We got more production per tree. We had to get more production to make the trees pay for their keep. We pruned our trees better, by cutting out smaller twigs and branches. This gave the sunlight a chance to filter into the tree, and the leaves were helped to do their work of forming more carbohydrates, which gave more color to fruit. Then we went to work on the soil, for we needed more moisture to take care of more leaves and more fruit. We are still at that job of soil building, trying to make the trees work to maximum efficiency.

Now the market wants BIG RED apples, or if we look over the grade specifications, we might say that the market wants big RED apples—and peaches, too.

Well, we've fertilized the pruned. Both have helped. We have tried to improve fertility and moisture-holding capacity of our soils. This is essential. But now, as never before—this year, we find that the market is going to pay most for fruit that is clean and that has size and color. Maybe the best price will not be any too high. Who knows? But what price will inferior grades bring?

There is one way of putting the last touch of quality on our fruit—that is by thinning. This operation offers a means of removing blemished fruits, that will later be culls, anyway. Here we have a chance of lightening up the load on the tree, preventing breakage. If thinning is done early enough, it helps to break up the biennial bearing habit of the tree. But what has thinning to do with size and color? Where does the *big red* apple or peach enter this picture? If we remove crowded, blemished fruit, it is certain that

the fruit that is left will have more moisture and carbohydrates, and with proper pruning, the fruit and leaves will have more sunlight, and more color-making materials will be built up.

In a thinning demonstration on Stark apple trees at Mount Olivet Orchards, New Windsor, Maryland, a few years ago, the size of fruit on thinned trees was outstanding, but when the fruit came over the grader, the deep red blush on the fruit was equally noticeable.

Glenn Ricks of Michigan reported that in 1932 he thinned three apple trees, to reduce the crop of scabby fruit. Figuring one man's time at 15 cents per hour, spending 1½ hours per tree to thin, the job cost 69 cents to thin three trees. The increased return over unthinned trees was $3.13 and there were 12 bushels less of scabby apples to handle at harvest time. Not only that, but there were 2 bushels less of 2-2½" fruit, 11 bushels less of 2¼-2½" fruit, 7 bushels more of 2½-2¾" fruit and 5 bushels more of 2¾-3" fruit on the three thinned trees than on the three unthinned trees. But why go to Michigan for results?

There are plenty of figures to show the value of thinning in Maryland and other states. Look back in the 1927 Proceedings of the Maryland State Horticultural Society, pages 173-183, if you need some refreshing figures on thinning. But no matter whether you find the figures or not, go out and convince yourself. Thin your apples, taking off the fruit to about 6 to 8 inches apart and removing cull fruit, leaving one fruit to the spur. It is getting late, but do it anyway.

Apples will show results. We know that because "spot picking" is a form of late thinning, and it shows results. In peaches, we have a little different type of growth. There is rather rapid growth until pits begin to harden. The growth slows down until about 2 weeks before ripening. Then comes the "final swell" in size. It is well to thin peaches by variety, in order of ripening, and thinning should be done by about 4 to 6 weeks before ripening. The general recommendations are to thin early peaches to about 6 to 8 inches and later varieties from 4 to 6 inches. However, in late thinning of peaches it is suggested that fruit be thinned a little lighter, as the fruit may not size as well, due to late thinning, and we may cut the crop yield. It takes about 200 peaches 2¼ to 2½ inches in diameter to fill a bushel basket, and about 150 peaches 2½ to 2¾ inches diameter to make a bushel.

NEGLECT OF SPRAYING

Quite a few Maryland growers have brought up the question, from time to time regarding the neglected orchard or the abandoned blocks of trees near their orchards. They feel that such trees are a menace and would like to see a law passed to force removal of such trees or orchards. In these days of countless laws and lax enforcement, it is difficult to get new laws passed and even harder to enforce such laws. This problem of abandoned or poorly-cared-for orchards is not only a Maryland problem. We copy an article from the "American Fruit Grower", which expresses the views of Prof. P. J. Parrott, Entomologist, of New York.

"Progressive growers, who constitute the backbone of the fruit industry, know how to raise excellent fruit and are producing apples unsurpassed in

quality and external finish. They for the most part need little outside help and face the future with confidence. However, under the stress of present economic conditions fruit growers here and there are abandoning the usual spray operations altogether or are spraying so indifferently that neglected orchards are rapidly becoming a menace to adjacent commercials plantings, said Prof. P. J. Parrott, of the New York State Experiment Station, in addressing members of the State horticultural society recently.

"Professor Parrott's comments were based on observations made by himself and his associates during the 1932 season and covered all sections of the State. While conditions may be especially acute with respect to some one pest in a given region, a serious insect problem exists in all of the important fruit districts.

" 'It is evident,' said Professor Parrott in discussing the attitude of the fruit grower toward the present market standards, 'that until we can perfect our machinery of production we cannot adopt a satisfactory marketing program because the production of fruit that conforms to accepted standards is the cornerstone about which the structure of the fruit industry must be built. Right now we need to set a goal and plan a program by which we can best reach that goal. A program which does not reflect these points of view cannot be regarded as sensible or rational.' "

MARKET REPORTS

On June 24, reports were issued that the Market News Service of the U. S. Bureau of Agricultural Exonomics would be abolished. Then came the report on June 29, that certain officers would be maintained in various cities such as Pittsburgh, Philadelphia, New York, Boston, etc., but Baltimore was not included. Such a move was not good for those producers of Maryland who market their eggs, cattle, fruits and vegetables in Baltimore. This market handles not only Central and Western Maryland products, but also the produce of growers in neighboring states. The secretary of the Maryland State Horticultural Society, A. F. Vierheller, took this matter up with Vice-President, W. Earle Withgott, in the absence of President G. S. L. Carpenter, who was in Arkansas on a business trip. On behalf of Maryland fruit and vegetable growers telegrams were sent to our Senators and Representatives and to Secretary of Agriculture Henry A. Wallace. Possibly there is need of economy, but the continuance of reports on the Baltimore market seemed to be worth trying to maintain. A letter was received from Assistant Secretary Tugwell on July 3, stating that it would be impossible, in the interest of economy to contine the Baltimore office.

STRAWBERRY INSPECTION

The Maryland State Department of Markets reports inspection of 135 cars of strawberries and 31,070 crates of berries shipped by truck (equivalent to about 103 cars), or a total of about 238 cars of berries.

HIGHER LEAD RESIDUE TOLERANCE

On June 28, the following letter was received by fruit growers:

NOTICE TO GROWERS AND SHIPPERS OF FRUITS:

"This Department, in announcing on April 2, 1933, a spray residue tolerance on lead, stated that it, in cooperation with State agencies, was studying the possibilities of developing effective lead-free spraying materials, and that meanwhile lead residues should 'be held to the lowest possible point.' That announcement fixed as a limit 0.014 grain of lead per pound of fruit.

"A wide survey in fruit producing areas has indicated that a schedule of spraying adequate to a control of pests will result in an amount of lead residue so great that the most efficient spray removal methods now known will not reduce the lead in a material proportion of the crop of the 0.014 tolerance. This tolerance is therefore revised to 0.02 grain lead per pound of fruit for the 1933 crop. The tolerance of 0.014 grain per pound will become effective for the 1934 crop unless the intensive and greatly expanded work now being carried out on non-lead arsenicals proves successful and permits a total abandonment of lead for 1934.

"The scope of knowledge of the toxicity of fluorine is restricted. Available scientific data indicate that it is not more toxic than arsenic. Limited experiments in the removal of fluorine spray residue point to the conclusion that it is more easily removed than either arsenic or lead. For the 1933 fruit crop prosecutions will not be instituted on fluorine spray residue if the fluorine is not in excess of 0.01 grain per pound."

Very truly yours,

HENRY A. WALLACE,
Secretary of Agriculture.

THE OTHER FELLOW

Its only human to look over the fence at the next farm, or to see the other fellow, and to envy him or his lack of trouble. The Eastern fruit grower thinks that the Western fruit grower has an easy time of it. But does he? The Western grower has to irrigate, thin his fruit severely, sell through agency, wash his fruit, grade closely, and keep his culls at home or close to home. He has to fight 3 broods of codling moth, where we have 1½ to 2 broods. He has aphis, codling moth and San Jose scale, like we have. He has powdery mildew to contend with.

On the other hand, we have scab, apple maggot (in New England), Oriental moth, and curculio.

But we have rather good rainfall and our markets are right at our doors. We have a little better outlet for our inferior grades, and possibly too easy a market for our culls.

So let's have deep respect for our Western friends and competitors, for they have shown real determination to overcome their problems and their marketing methods are worthy of imitation.

WEIGHTS AND MEASURES

Fruit growers interested in reading over the Maryland Laws relating to Weights, Measures, Apples, Agents, and Tobacco should send to University of Maryland Extension Service, College Park, Md., asking for Extension Bulletin No. 66. Weights of a few of the commodities of interest to fruit growers are taken from this bulletin:

"Apples (dried), 28 pounds, (green), 50 pounds, per bushel; cow peas, 60 pounds per bushel; lime, 80 pounds per bushel; millet (German and American), 50 pounds per bushel; oats, 32 pounds per bushel; orchard grass seed, 14 pounds per bushel; peaches (peeled), 40 pounds per bushel; peaches (unpeeled), 32 pounds per bushel; potatoes (sweet and Irish), 60 pounds per bushel; rye, 56 pounds per bushel; red top grass seed (chaff), 14 pounds per bushel; red top grass seed (fancy), 32 pounds per bushel; rape, 50 pounds per bushel; timothy grass seed, 45 pounds per bushel; wheat, 60 pounds per bushel."

THE TRUCKMAN—SALESMAN

The reports of the annual meetings of the various state horticultural societies are being received by the Secretary, and it is interesting to note that nearly all of them have taken up the discussion of the truckman—salesman. The general feeling is that he is a good fellow to have around, as he takes low grade fruit and peddles it out. However, he is condemned for "facing up" a poor package, and in some cases selling his wares as No. 1 fruit. This has caused embarrassment to growers in states where the virtues of the good fruit of the state have been advertised by radio and newspaper. In some cities, the good fruit has not moved well, until the truckmen have sold their cheap, poor stuff, and dealers and commission men have complained, or have bought good fruit in very small quantities.

As a summary of this question, the feeling is that the truckman-salesman has become a unit in our marketing system, but that he must be regulated in some way, so that his grades and prices will reflect the idea of fair dealing with the public on the part of fruit growers.

THE PENNSYLVANIA MEETING

Last month, the Secretary of the Pennsylvania Horticultural Association extended an invitation to Maryland fruit growers to attend the meeting of Pennsylvania growers, to be held at State College, Pa., on the evening of Monday, August 7 and all day on Tuesday, August 8, 1933.

Twenty-five years of experimental work on fertilizer and cultural treatments will be inspected and the differences explained. There will be plenty of other things of interest to be seen, and a beautiful trip beside. It is hoped that a good delegation of Maryland growers will be present. Women and children are invited, too, if you would like to take the family. There are flower gardens to be seen, and children can wade or swim in Spring Creek,

along the edge of the College orchard.

Those interested should drop a card to Prof. F. M. Fagan, Horticultural Department, State College, Pa., for room reservations. If you can afford a little trip to get away from things for a few days, here is a delightful, interesting and inexpensive vacation.

NEW THOUGHTS ON OLD IDEAS

With the spray residue situation before us, and the substitution of calcium arsenate as a codling moth control, we are confronted with the question:—"Will calcium arsenate keep down the codling moth"? Some authorities say that we can expect 15% less efficient control and some even feel that 25% less control of the moth will result, where calcium arsenate is used in place of lead arsenate. But the lead tolerance on fruit, even though it has been increased to 0.02 grains per pound of fruit, (formerly 0.014) still offers a problem, and calcium arsenate is one of our present ways out of the lead residue difficulty. We are not yet prepared to say what possibilities are offered by magnesium arsenate, or some of the other non-arsenate sprays.

Another question comes up. We might ask ourselves, "Should I depend upon spraying alone, to control codling moth?" In numerous meetings in Maryland and other states, Dr. Cory and other authorities have gone into the matter of orchard sanitation. They have advised storage of crates and baskets in closed, or screened rooms, to stop moths from flying from their winter quarters in these containers, in the spring. In the May, 1933 issue of the Maryland Fruit Grower, a description of screening a packing house was printed as reported by an Indiana grower, in which he showed that at a labor and material cost of $45.00 he had trapped about 75,000 adult codling moths, that did not have the chance to get out into his orchard. This orchard was heavily infested the year before.

Entomologists of Maryland and other states have reported at fruit growers' meetings that sanitation in the orchard was a big step in codling moth control. They have given figures on costs and results of scraping trees, and the use of treated and untreated corrugated paper bands as traps for the worms that crawl under these bands to spin a cocoon and later emerge as full grown moths to lay more eggs, to cause more worms that will damage more apples. But where treated bands are used, the moth does not emerge, for the worm is killed under the band.

Is banding necessary? Does it pay for itself? What does it cost? Let's consider the findings and experiences of others. Mr. Frank W. Farnsworth, Waterville, Ohio, gave an excellent talk, last January before the Maryland State Horticultural Society on his control of codling moth. With about 50% infestation of moth, he had a real problem. First, he used emergence cages of his own, and timed his sprays according to when the moths began to fly out of winter quarters. He pruned his trees so as to get spray into the tops thoroughly. He used a hoe and scraped the rough bark from the tree trunks, catching the scrapings in canvas or burlap fitted snugly to the bases of the tree trunks. These scrapings were burned. At 15 cents per hour, the cost of scraping a 23-year-old- tree was 7 cents, and banding cost 5 cents per tree for labor and material. He reported that 2

inch wide bands were as effective as 4 inch bands; that the bands were removed and burned after apple harvest; that all trees old enough to have rough bark were banded with treated bands; and that there was no damage to bark by the treated bands, but that the bands were not applied at the same place on the tree trunk in following years. He used thorough spraying as part of the program, and nearly cleaned up codling moth.

Merely scraping the trees does but little good, but banding, in addition, is very much more beneficial.

Some recent work by G. E. Marshall, Entomologist at Indiana Experiment Station gives some rather striking results in the use of treated bands. First, the places where moths will spend the winter, were investigated and it was found that on the tree, codling moth will spin up cocoons in crotches, split branches, knot holes, bird nests, dead limbs, rough bark, or even tight flakes of bark, and also in locust stings on the tree. On the ground, moths were found on apple mummies, apple sprouts, aphis injured roots, punky wood and bark, weed stems, pieces of apple baskets or boxes, paper or old corn stalks, in fact 10.6% of the overwintering larvae were found on the ground, and the other 89.4% were on the trees. In one orchard of 160 acres, 111,011 larvae were found on trees, and 13,499 were on the ground in such places as mentioned above.

Mr. Marshall figures that bands would catch 40% to 50% of the overwintering larvae, if trees were banded, and that birds, cold weather and diseases would kill off from 15% to 25% of the worms. Now, if an orchard is heavily infested and receives 7 sprays, Mr. Marshall stated that labor and spray material would cost about 11.6 cents per 100 worms killed. Even then the possibility is that control will be about 75% with about 48% of the fruit carrying stings.

Further figures by Mr. Marshall show that it cost 15 cents to scrape a tree and remove litter under the tree, and burn it. He figured that banding material cost seven-tenths of a cent per foot or 2.8 cents per tree, so that it would cost 1.78 cents to kill 100 worms by banding or for every dollar spent in spraying, as many moths could be killed by banding at a cost of 15 cents, providing the grower had not been banding. It is to be remembered that this does not mean that spraying is not effective, but that spraying and banding are combined practices that should be considered. In other words, get the worms before they become moths and lay eggs, but the larvae of those that do become moths must be killed by spraying, especially trying to kill off the first brood worms.

Dr. Leonard Haseman of Missouri, reports in Missouri Circular 169, that he got 1300 larvae from a 2 inch band, in 1932. Of course these larvae were removed from time to time, and the band replaced. The usual catch of larvae in one band is from 100 to 150.

The June, 1933 issue of Pennsylvania Horticultural Association News, discusses banding. They advocate the scraping of the tree at any time from harvest to blossom time. Bands should be applied from June 15 to July 1 for best results. Preferably, treated bands should be used. These bands are made by cutting rolls of corrugated paper strawboard into 2 inch widths and dipping them in a hot mixture composed of 1 pound of beta-napthol in 1.5 pints of high viscosity red engine oil. A cold mixture for treating bands is being developed. Banding material, treated and ready to apply is priced at about 1½ cents per foot. The average time of scraping mature York trees in

Pennsylvania was given as three trees per hour, scraping all rough bark on trunk and branches. An average of 4 feet of band was required per tree. The average cost of scraping and banding a tree was about 12.2 cents per tree.

It is not too late to apply bands for control of the over-wintering codling moth. Of course, there's thinning to be done, now, and possibly labor and money are scarce at present.

Banding of trees is not new in Maryland, as Dr. Cory has been active in having trees banded by growers having a serious codling moth problem. The point in bringing this matter up at the present time, is that we do not know what the residue ruling may be in 1934, and if there are some measures that will bolster up the efficiency of our present control of codling moth, yet keep residue to a minimum, even with a little added expense, such measures seem worthy of consideration.

READ THIS

At a recent meeting of fruit growers of the Virginia and West Virginia region of the Shenandoah-Cumberland fruit section, there were reports that the apple crop would be rather short, due to poor set, heavy drop, and the injuries from scab and aphis. Growers seemed hopeful of a little better market, and felt that thinning should be done, to help increase the harvest of better grades of fruit, beside reduce the handling of a lot of cull and off-grade stock.

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Where?
Mowing grass in a cemetery.

Teacher—"What did they call those tablets that the Gauls used to write on?"

Bright Boy—"Gaul stones."

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"The most effective control yet devised against Codling Moth". Where growers are equipped to wash their fruit, this combination of Lead Arsenate and Summer Oil offers by far the best protection in bringing the fruit through to harvest time free from Codling Moth worms and stings. A clean crop this year has every prospect of real returns.

Recent developments in fruit cleaning methods insure no difficulty in meeting all residue tolerances, and at little cost.

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Orthol-K, in combination with other arsenicals, such as Calcium Arsenate, offers an ideal spreader-sticker, and at the same time backs up the arsenical with high egg-killing efficiency.

Fluorine compounds show very good insecticidal efficiency against Codling Moth when used in combination with Orthol-K.

Nicotine—Oil Combination

Generally acknowledged to be the best substitute for Lead Arsenate or other sprays which leave objectionable residues.

Gives control equal to or better than Lead Arsenate alone, requires no expense for cleaning, and is the best all-around orchard clean-up spray for Aphids, Leaf-hoppers, Scale Insects, Red Mite and similar forms, which devitalize the trees, reduce grades and cut productiveness. Recently reduced prices on nicotine sprays justifies the use of this combination in every orchard.

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A new colloidal copper which has proved more effective, with safety, than Bordeaux; highly effective for the Apple Scab and Brooks' Fruit Spot. It is much safer than lime-sulphur. Coposil combines readily with Orthol-K Summer Oil.

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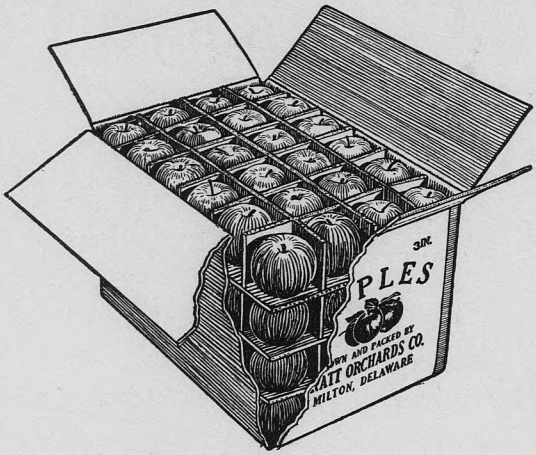

cartons

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We have demonstrated during the past two seasons that our own hand eating varieties bring 25c to 50c per bushel more in "apple-cell" cartons than in baskets. The cost of the cartons is very little more. The cost of packing and storage no greater, and sometimes less. Use "apple-cell" cartons this season—start with a part of your crop at least.

Standard sizes—same as the western bushel box—48—3½" apples, 72—3¼", 96—3", 112—2¾", 160—2½", 200—2¼" and 48—3" (½ bu.).

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When you use calcium arsenate this season be sure to combine it with Sulfocide, whether you need a fungicide or not. Sulfocide makes calcium arsenate safer and increases its kill. No spreader or lime needed.

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